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On Some Forms of
Diarrhoea in Children,
Their Cause and Treat-
ment

by,

John R. Gibson M.B., C.M.

— " —

That Diarrhoea is one of the most fatal and common scourges amongst young Children will I think be admitted without much controversy. This fact is soon recognised by the Physician before he has been very long in Practice.

I respectfully submit how,
ever

ever that the mortality might be greatly lessened by the cause being carefully inquired into, and minutely investigated before any particular mode of treatment be adopted.

Even in those days of Scientific medicine, it is far too common for the Medical Practitioner to have one and the same routine treatment for every case; consequently, he can prescribe to as much purpose if he is merely told that the child is suffering from diarrhoea or Purging, without his ever seeing the Patient.

In this Thesis I shall endeavour to discuss the Causes and Treatment which I myself have most successfully adopted with Special variations according

according to the nature of each particular case.

I believe that Diarrhoea may be divided (perhaps arbitrarily) into Two Forms (I) Simple or Catarrhal where temperature does not arise much above normal and (II) Inflammatory. I shall treat of these two forms separately as far as possible (I) giving their causes and (II) their treatment.

I SIMPLE DIARRHOEA.

This form is characterised by very little general disturbance, the chief symptom of it being a thin watery discharge from the bowels, sometimes of the consistence of slime, and at other times, and in other cases of a
greenish

greenish colour, and very rarely mingled with blood. It is very variable in its duration according to the success of the treatment. In order to treat the case successfully the cause must be found out.

According to my observation the children attacked with this variety are generally weakly - in short puny infants - the children of unfed and weakly parents. another frequent cause is an unhealthy condition of the mother's milk - being too weak or too strong. Of these two causes the weak milk I think is the more frequent. I shall here state a case from among those that have come under my observation.

observation, bearing on this point.

During the summer of 1886 I had under my care a child of about three months which was fed wholly upon the breast, suffering from this affection. The stools were very frequent and watery, the temperature was normal, but the pulse rather slow. There was no vomiting. I prescribed one teaspoonful of lime-water along with a little peppermint water thrice a day with the result, that during the treatment the child got well; but as soon as the treatment was dropped, the Diarrhœa again returned.

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ed. on examining the milk of the mother, I found it to be very watery & deficient in oil globules. As the mother was weak the child was taken from the breast, and fed upon Cows milk properly diluted with the result that the bowels resumed their normal action.

an unhealthy atmosphere is also of this variety, as well as of the severer forms, a very prevalent cause. This is a cause moreover that occasions great trouble to the Practitioner in his treatment of it; for although generally cured for the time being by proper treatment, yet it is very apt to occur when medicinal treatment is given over

over. a foul atmosphere has long been recognised as giving rise to rickets, chest Diseases &c. It is a matter of interest to enquire how this cause produces Diarrhoea.

I am of opinion that a foul atmosphere does not in the first instance produce it; but that from the want of a proper supply of oxygen as also by the inhalation of injurious gases, the system in the first instance gets weakened. Then the least error in diet or exposure to cold immediately causes the

diarrhoea to commence, which a healthy child would have been able to resist. Of course other diseases are quite as apt to set in, in such a case as Diarrhoea. In connexion with this form of disease, the question of sanitation is, therefore, an all important one. The outbreaks of Diarrhoea during Summer - both of the simple and inflammatory variety - are undoubtedly very frequently caused by the want of proper sanitation. In my opinion this want is as frequent an detrimental in small towns as in our larger cities - and perhaps more

more so. In our greater towns there is a Medical Officer of Health who devotes the whole or greater portion of his time to his duties as such - Whereas in smaller towns of say 5,000 inhabitants the Medical Officer is so poorly paid that he seldom finds time to trouble much with the matter. Again in such towns the Sanitary Inspector is quite ignorant of his duties - and it appears to me - that it would be much better to divide counties into districts & appoint proper sanitary officials with a fair salary to them.

I In such small towns, as
I have above mentioned, it
is not at all an uncommon
occurrence for a Father and
Mother along with a large
family to live in a small Den
q which the cubic contents
are not a superfluity, with
only a loophole for a
window - which is kept barred
from years end to years end.
Such a place can only be
a perfect Hotbed of Disease.
In such Houses the very
worst forms of Diarrhoea
are to be found. The
People which live in many
of them could in many
cases afford a much larger
house, - but from a
Arist

It is formed it may be
throughout many gener-
ations they become utterly
demoralised regarding the
condition - the purity - capa-
city and ventilation of their
Dwellings. The sooner
such persons are taught
by act of Parliament, by
Education, and by every
other possible mode, the dire
danger they incur, and the
great wrong they inflict
on the community at large,
the better will it be for
the future of this Country.
Children reared in such
unwholesome dens - if they
are ever allowed to see
manhood or womanhood

from disease - grow up useless, heavily weighed down by depraved feelings, and soon become a burden to the Ratepayer by becoming inmates either of the Poor-house or the Jail.

Infants are often troubled with this affection during teething, but I cannot say that I could ever clearly ~~the~~ trace the cause to the teeth alone; there being no distinct evidences of irritation about the Gums. It has always been on my part a matter of doubt, how to a natural process such as this, so could be attributed

uted so many evils. From
many inquiries into the
cases of children suffering
from this affection during
teething, I have come to the
conclusion that in a great
many cases the Cause is
due to the Mother or Nurse
administering at this time
what she calls soothing
medicine, for the purpose
of soothing the child at this
invariable period - and thus
saves them the trouble of
nursing it. I have fre-
quently traced the starting
the Diarrhoea to the admini-
stration of such nostrums.
Consequently I am of opinion
that this may account
for

For a great many of the cases
of Diarrhœa at this time,

Children under 4 years are
more liable to be attacked with
this affection - than those over
it.

Cold and Damp are fre-
quent causes against this
complaint. There is nothing
better as a prophylactic,
than good warm clothing,
against this and other
Infantile diseases.

A too common and
pernicious cause of this evil
is the administration of
purgative medicine to Chil-
dren of tender years, Many
a child, I believe, has been

sent to an early grave, through
the ignorance of those in charge
of it, administering purgatives
in a haphazard manner.

This is a cause in many
cases most difficult to guard
against. Many children are
almost no sooner born, than
they are foolishly subjected to
doses of Castor oil, and thus
they have to undergo no mat-
ter how their bowels are acting.

Another, and perhaps the most
common of all causes is the
administration of unsuitable
diet. It is often an Her-
culean task to convince
the mother or nurse that
milk is nature's food for
the

the child. I have seen an Infant of only three months receiving for Breakfast, bread, tea, & salt Herring.

With forms of diarrhoea symptomatic of other diseases I have nothing to do in this thesis, and I shall therefore proceed to give the treatment of the Simple Variety.

Treatment of Simple Variety.

The treatment of this variety also generally applies to that of the severer or Inflammatory form. If it be found that the child is fed upon anything but milk diet, whilst it is under a year old, it

it should at once be put upon milk diet, or if the mother is nursing it, which in most cases sh^d. be the case, it sh^d. be confined entirely to it's mother's milk.

It is sometimes of considerable importance to examine carefully the milk of the mother. as in some cases the cause may be found in the milk. attention to ^{the} diet is in the majority of cases all that is required. attention to temperature and warmth is not however without considerable importance; the Physician sh^d. therefore see that the child is encased in flannel, and the apartment

apartment kept at a temperature of from at least 40° to 50° F., Another point of no small importance is that the room be kept thoroughly aired and ventilated.

In places where the ventilation is bad, and close, it is wise to remove the child to some better aired apartment, and to let down the upper sash of the window of the badly aired room, that it may be cleansed from the impure & noxious air. Should the child not improve quickly small doses of lime water should be added to the milk. This is a very useful remedy especially in

in those cases that are accompanied with vomiting. When Vomiting is present, Ingulin, in my experience, is a very useful agent, This is a preparation from the Gizzard of the common fowl. In the case of Infants fed ^{from} the Bottle this agent should be mixed with the milk which has been previously brought to a temperature of about 80°F. In the case of Infants nursed upon the breast, the powder should be administered by the mouth.

This agent is even more valuable than Lime water, Chalk Mixture &c, which I believe when given indiscriminately, and in too large doses, cause irritation of the Stomach.

Stomach, instead of allaying it; and, in addition I have often seen an intractable form of constipation arising afterwards from their use.

Ingluvin prevents the milk from coagulating into hard clots, and in short peptonises it. It likewise produces a sedative effect upon the stomach & bowels. I shall here adduce two cases from my note Book illustrative of the beneficial effects derived from its use.

Case (1) A.B. was a child aged six months under my care during the summer of 1887. It was suffering from a thin watery discharge from the Bowels.

This

This was combined with
vomiting of curdled milk
It was being fed upon Boro
milk to which was added
a proportionate quantity of
water & sugar. The temp.
of the child was 99.3° and
its pulse was somewhat
quick. The motions came
on every hour or so, and
were of a greenish colour,
as the bowels were distended
- evidence of irritating matter
in the alimentary canal, I
administered a teaspoonful
of castor oil which had
the desired effect. At the
same time it was put upon
doses of lime water added
to the milk, and a little
aromatic chalk mixture.
Next day the Diarrhoea
still

still continued. as the Child
was fast losing strength,
it became of paramount
importance that the discharge
should be checked. The
stronger astringent were there-
fore tried viz catechu, Log-
wood &c but with only a
very partial effect. as a
last resource I added five
grains of this powder to a
half pint of milk as pre-
viously explained, and the
Child rallied and recovered.

(Case 2) C.D., a child, aged about
four months was similarly
affected as case one, with this
difference that there was no
distension of the Bowels. It
vomited everything that
was administered. From
my

my former experience I at once treated it with Influxin with the very best result.

In some cases milk, rendered however weak, will not be retained by the stomach. This probably arises from some unnatural action of the Gastric Juice, rendering the clots so hard - or perhaps an alkaline albuminate, as to become an irritant to the stomach. In all such cases Influxin is likewise valuable. When the vomiting cannot be stopped by the treatment described, Allan and Hankbury's, or Barclay & Moores Food for Infants are frequently retained well,
as

as also in some special cases
pounded raw meat.

II Inflammatory Form i.e.
where Febrile Symptoms are
present.

In this Form, the symptoms
are not always the same. In
their first appearance the
child generally becomes more
irritable than usual, and
commences soon to vomit.
In a short time Diarrhoea
commences, and the temperature
becomes high. The child
often assumes a 'collapsed'
look, & becomes often very
pale. If much pain is
present the features become
pinched. This disease pre-
vails generally among infants
who

who are badly nursed & fed.
In most cases the adminis-
tration of improper and un-
suitable food is the cause.

The stools vary in frequency
in proportion to the severity of
the case. They are of various
colours, frequently natural,
at other times darker. Often
they are of greenish colour.

Of these green stools I have
been able to distinguish two
different forms. In one
set of cases they contain
Bile, to which, I believe, the
green colour is due, as
may be shown by the usual
Bill tests, and Fehling's
under microscope. Another
set of cases do not contain
Bile

Pile. There is also a difference in the symptoms of these two forms. In those cases where the stools contain Pile, the Gastric symptoms are marked - such as vomiting and tenderness over the stomach, manifested by the child wincing whenever pressure is applied to that Region. In the other form where the faeces do not contain Pile, the tenderness is most marked over the lower part of the abdomen. In both forms of this Disease I have made a very careful microscopic examination of the stools. In those that contained

contained Bile the microscope showed Endothelial cells from the Bowel, also crystals of Biliverdine, Cholesteroline and debris. In those which did not contain Bile, Endothelial cells were also present. but I was also able to see a Bacillus which appeared to me to be about the length of a blood corpuscle. From the want of a proper apparatus, for measuring, I could not state exactly. I took special care in collecting the excretion of the Bowels by inserting capillary tube well into the Rectum, & immediately sealing them hermetically, so that it

it could not be inoculated
from surrounding media.
This fluid in some cases
showed the Bacillus to
be present. Other evidence
of this form being due
to a specific cause is
manifested by its often
attacking several of the
younger members of a
family, the one after
the other. Though a
rare form of diarrhoea
than others, yet I am
quite satisfied that it
does exist. Afterwards
I proceeded to implant
some of the fluid col-
lected from the Bowels
in chicken Broth &
Jelly, and was surprised

to find that the Green
spot daily grew larger.
When this was examined
microscopically it showed
the Bacillus

In the 'Lancet' of Nov
14th 1887 page 1029 I
notice that a M. Leagel
describes two varieties also
of green Diarrhoea in
children. My experience
however does not confirm
his observation that he
never found any dys-
pepsia to be present in
the Bilious form. In
nearly all my cases
where Bile was present
in the faeces, there were
more or less severe gas-
tric disturbance.

the first time I directed
my attention to this sub-
ject happened during the
time I was acting as an
assistant to a Practitioner
in Leeds during the spring
& summer of 1886., what
led me then to examine
the stools microscopically
was the difference in the
gastric symptoms of
children passing these
stools. In no case of a
fatal termination was
I allowed to make a
P. M. examination, (and
here I may state this
form is frequently fatal)
consequently I am unable
to

to state the Pathological condition of the alimentary tract.

The Bacillus of M. Lesage is described in the number of *Lancet* already quoted, the forms, there described, are I believe the same which I met with in Leeds.

The non-bilious stools generally occur at first in very young children from 4 weeks old up to the 6th month. In one case I saw it even in a child of two years.

In other cases of Diarrhoea where febrile symptoms are present, the stools are

of normal colour but watery
and in some cases clayey
in colour, from deficiency
in bile colouring matter,
perhaps due to irritation
of the duodenum, causing
either spasm, or, by swelling
of the surrounding muscles
membrane, occlusion of
the hepatic duct.

In many cases the milk
or other article of diet
passes through the ali-
mentary canal without
having undergone diges-
tion, or that only partially
which might indicate
very much increased
peristaltic action, or
or

or interference with the mechanism adjusting the passage of contents of stomach into the duodenum.

There are some cases in which blood is passed, resulting in dysentery. In children however I have seen but few examples of this complaint.

Excepting the form of diarrhoea in which a *Bacillus* was described as present the causes of this variety are much the same as those I have previously described, while treating of another variety.

Treatment

Treatment.

I shall now proceed to the treatment of the above varieties. From the stools we learn much in the way of treatment. In cases where the stools contain bile, and where there is evidence of irritating matter in the alimentary canal, I always in the first instance proceed by administering to the child a purgative such as Hydrag. c. rect. or castor oil, suitable to its age; this has a very soothing action generally, afterwards a administer milk

and where, I believe, the
great Bowel is the organ
where the disease is
seated, Mr. Leape advo-
cates Lactic acid & he
be given internally. As
for myself I have never
used it. I am of opinion
that this form of disease
being confined to the large
Bowel can be best treated
by a local antiseptic
introduced by the Rectum
in the form of an injection
of this I have had proof.
I prepare a solution of
Carbolic acid of the
strength of four minims
of the acid to a pint of
lukewarm water, and
I inject some of the
solution

solution into the Bowel
of the sufferer. In some
cases this requires to be
done more frequently
than once; I have never
seen it to ultimately fail
in these cases. The mo-
tions in colour & quantity
soon become normal, the
purging ceases, and the
temperature soon falls to
normal.

In cases where tenderness
is present, I have found
this treatment by in-
jecting acid into the
alimentary canal to have
a very soothing effect in
some cases. This however
may

may, be partially attributed
to the soothing influence
of the water.

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